

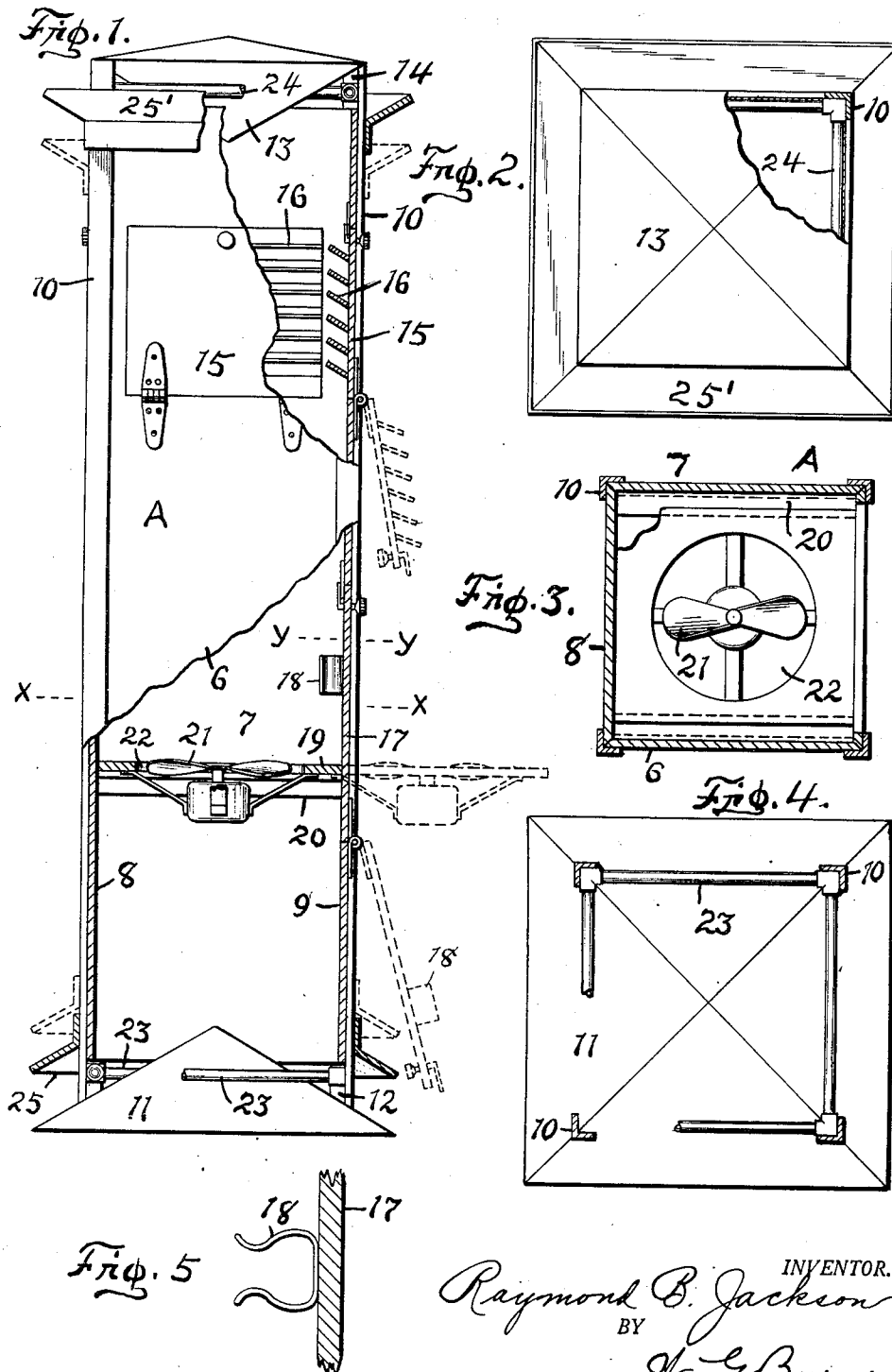
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PORTABLE STERILIZING APPARATUS

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PORTABLE STERILIZING APPARATUS

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5 Claims. (CI. 21-74)

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This invention relates to improvements in a portable sterilizing apparatus adapted for elimination of bacteria from the atmosphere confined within a room of a dwelling or other enclosure.

It is known that subjection of bacteria to the effect of ultra-violet rays, emitted from lamps of a character producing such rays, results in destruction of the life of bacteria. And it is also known that ultra-violet rays emitted from any source is highly detrimental to human vision.

An object of the instant invention is to afford an apparatus that is readily installed or moved about from one place to another in a room or other enclosure and through which the atmosphere is continuously circulated and subjected to ultra-violet rays emitted from suitable lamps located in the apparatus.

Another object of the invention is to provide in connection with the apparatus adjustable blinds or deflectors by which the rays emitted from the lamps are restricted to planes parallel with the floor and ceiling of the room out of normal range of vision of occupants of the room thus to obviate baneful effects of the rays.

And a further object of the invention is to provide means for subjecting instruments or other articles to sterilization in the apparatus by the effects of the emitted ultra-violet rays during circulation of the atmosphere passing therethrough.

Other objects and advantages of the invention appear in the following description.

An illustrative embodiment of the invention is shown in the accompanying drawings, in which—

Fig. 1 is a front elevational view of an apparatus embodying the invention, portions thereof being shown in section to expose the interior thereof;

Fig. 2 is a top plan view of the apparatus, partially broken away;

Fig. 3 is a transverse section of Fig. 1 on the line x—x thereof;

Fig. 4 is a top plan view of the base for the apparatus including a fragmentary arrangement of lamps overlying the base and supports therefor which are shown in section; and

Fig. 5 is a detail horizontal section on the line y—y of Fig. 1 showing one of the instrument supports secured to a door.

Figs. 2, 4 and 5 are drawn to an increased scale.

The illustrative embodiment of the invention consists of an upright flue, indicated generally by A, having front and rear walls 6 and 7 and side walls 8 and 9 supported by corresponding

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corner posts 10 at their junctures. The lower ends of the posts rest upon a pyramidal base 11 and extend downwardly beyond the bottom of the front, back and side walls, thus to afford an inlet opening 12 for air. The upper ends of said posts have mounted thereon an inverted pyramidal lid 13 and extend upwardly beyond the tops of said walls to afford an opening 14 for the outlet of air.

The upper portion of the flue A has hinged doors 15 in its several walls, the doors being provided with inwardly extending air deflectors 16 that tend to collect dust from the atmosphere passing through the flue, the dust being subsequently removed occasionally by opening of the doors and wiping the deflectors.

The midportion of the flue has another hinged door 17 in one of the side walls 9 thereof, on the inner side of which are disposed one or more clips 18 for the support of instruments or other articles (not shown) to be sterilized.

A horizontally sliding shelf 19 is mounted on cleats 20 in the flue, to which shelf is secured a motor-driven fan 21, there being an opening 22 in the shelf to permit passage of air there-through driven by the fan.

A series of ultra-violet ray lamps 23 are mounted on the extending ends of the posts 10 below the walls of the flue and are disposed in the plane of the air inlet opening 12, so that the rays emitted from the lamps radiate outwardly through said inlet opening and upwardly into the flue. On the lower portion of the flue about the exterior thereof, is arranged a vertically adjustable blind 25 by means of which the rays from the lamps, radiated outwardly through the air inlet 12, are restricted approximately to the plane of the inlet opening and parallel with the floor upon which the apparatus is placed, the floor not being shown.

Another series of ultra-violet ray lamps 24 are likewise mounted on the upwardly extending ends of the posts 10, above the tops of the flue walls, and are disposed in the plane of the air outlet opening 14, so that the rays emitted from the lamps 24 radiate outwardly through the air outlet opening 14, and downwardly into the flue. On the upper portion of the flue, about the exterior thereof, is arranged another vertically adjustable blind 25' by means of which the rays from the lamps 24 radiate outwardly through the outlet opening 14, are restricted approximately to the plane of the outlet opening, and parallel with the ceiling of the room in which the apparatus is located.

All of the lamps and the motor for the fan are energized by current from a suitable source of energy through ordinary conductors as in the usual manner (not shown).

Operation

In utilizing the invention, the apparatus is stood upright on its base upon the floor of a room with its upper end disposed adjacent the ceiling. Suitable connections then are made for electrically energizing the lamps and the motor for the fan ordinarily by use of a plug-in extension cord. When the electric current is turned on, the atmosphere in the room is drawn in through the inlet opening 12 into the flue and forced upwardly therethrough and expelled through the outlet opening 14, the lamps 23 and 24 emit ultra-violet rays outwardly through the air inlet 12 and the outlet opening 14, and directly into the flue. The blinds 25 and 25' are adjusted on the flue so the rays radiated outwardly through the air inlet and outlet are confined closely to the floor and ceiling of the room. Opening of the door 17 permits the shelf 19 together with the motor fan mounted thereon to be removed when occasion arises, and dust accumulated in the upper portion of the flue is readily removable upon opening of the doors 15.

By continuous operation of the apparatus the atmosphere within the room is cleansed of air borne dust, bacteria, and the like, thus improving the condition of the atmosphere within the room.

Variations from the particular construction above disclosed may be restored to by the exercise of skill in the art, without departure from the spirit or scope of the invention.

What I claim is:

1. A sterilizing apparatus consisting of a flue having a pyramidal base and an inverted pyramidal lid, said base and lid being spaced respectively from the bottom and top of the walls of the flue to provide an inlet and outlet for air, a motor-driven fan located in said flue to cause upflow of air through the flue, doors in the walls of the flue provided with dust collecting deflectors located above the fan, blinds adjustably positioned on the flue respectively adjacent said inlet and outlet openings, ultra-violet lamps located respectively in the planes of said inlet and outlet openings adapted to emit rays outwardly through said openings and into said flue, and another door in a wall of said flue provided on its inner side with clips for supporting articles to be sterilized.

2. A sterilizing apparatus consisting of a flue having a pyramidal base and an inverted pyramidal lid, said base and lid being spaced respectively from the bottom and top of the walls of the flue to provide an inlet and outlet for air, a motor-driven fan located in said flue to cause upflow of air through the flue, doors in the walls of the flue provided with dust collecting deflectors located above the fan, blinds adjustably positioned

on the flue respectively adjacent said inlet and outlet openings, and ultra-violet lamps located respectively in the planes of said inlet and outlet openings adapted to emit rays outwardly through said openings and into said flue.

3. A sterilizing apparatus consisting of a flue having a pyramidal base and an inverted pyramidal lid, said base and lid being spaced respectively from the bottom and top of the walls of the flue to provide an inlet and outlet for air, a motor-driven fan located in said flue to cause upflow of air through the flue, blinds adjustably positioned on the flue respectively adjacent said inlet and outlet openings, ultra-violet lamps located respectively in the planes of said inlet and outlet openings adapted to emit rays outwardly through said openings and into said flue, and a door in a wall of said flue provided on its inner side with clips for supporting articles to be sterilized.

4. A sterilizing apparatus consisting of a flue having a pyramidal base and an inverted pyramidal lid, said base and lid being spaced respectively from the bottom and top of the walls of the flue to provide an inlet and outlet for air, a motor-driven fan located in said flue to cause upflow of air through the flue, blinds adjustably positioned on the flue respectively adjacent said inlet and outlet openings, and ultra-violet lamps located respectively in the planes of said inlet and outlet openings adapted to emit rays outwardly through said openings and into said flue.

5. A sterilizing apparatus consisting of a flue having a pyramidal base and an inverted pyramidal lid, said base and lid being spaced respectively from the bottom and top of the walls of the flue to provide an inlet and outlet for air, a shelf slidably mounted transversely in said flue provided with an opening therein, a motor-driven fan secured to said shelf, a door in one wall of said flue to permit removal of the shelf and motor-driven fan, ultra-violet lamps located respectively in the planes of said inlet and outlet openings adapted to emit rays outwardly through said openings and into said flue, and blinds adjustably positioned on the flue respectively adjacent said inlet and outlet openings.

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